

**UNITED STATES DEPARTMENT OF AGRICULTURE  
NATURAL RESOURCES CONSERVATION SERVICE**

**ECOLOGICAL SITE DESCRIPTION**

**ECOLOGICAL SITE CHARACTERISTICS**

**Site Type:** Rangeland

**Site ID:** R048BY008NM

**Site Name:** Mountain Shale

**Precipitation or Climate Zone:** 16 to 30 inches

**Phase:** \_\_\_\_\_

## **PHYSIOGRAPHIC FEATURES**

### **Narrative:**

This site occurs on nearly level to sloping landscapes below steeper slopes of interbedded sandstone and shale. Slopes range from 2 to 10 percent. Elevation ranges from 7,200 to 7,600 feet above sea level.

### **Land Form:**

1. Mountain slope

2.

3.

### **Aspect:**

1. N/A

2.

3.

	<b>Minimum</b>	<b>Maximum</b>
<b>Elevation (feet)</b>	7,200	7,600
<b>Slope (percent)</b>	2	10
<b>Water Table Depth (inches)</b>	N/A	N/A
	<b>Minimum</b>	<b>Maximum</b>
<b>Flooding:</b>		
<b>Frequency</b>	N/A	N/A
<b>Duration</b>	N/A	N/A
	<b>Minimum</b>	<b>Maximum</b>
<b>Ponding:</b>		
<b>Depth (inches)</b>	N/A	N/A
<b>Frequency</b>	N/A	N/A
<b>Duration</b>	N/A	N/A

### **Runoff Class:**

Medium to rapid.

## CLIMATIC FEATURES

### **Narrative:**

The climate is characterized by cold, wet winters in which more than 50 percent of the total annual precipitation is received during the winter. The balance of the precipitation is received in the summer months, some of it in the form of high intensity thunderstorms. Average annual precipitation is about 22 inches but ranges from 16 to 30 inches and yearly fluctuations are common.

The average frost-free period is about 80 days but ranges from 60 days at the highest elevations to 110 days at the lowest elevations; however, the period lengths vary. The average last killing frost in the spring occurs about June 10<sup>th</sup>. The average first killing frost in the fall occurs about September 20<sup>th</sup>. Average annual air temperature is 22.6 degrees F in January and 64.5 degrees F in July with extremes ranging from -40 degrees F to 95 degrees F.

Climate data was obtained from <http://www.wrcc.sage.dri.edu/summary/climsmnm.html> web site using 50% probability for freeze-free and frost-free seasons using 28.5 degrees F and 32.5 degrees F respectively.

	<b>Minimum</b>	<b>Maximum</b>
<b>Frost-free period (days):</b>	67	93
<b>Freeze-free period (days):</b>	95	115
<b>Mean annual precipitation (inches):</b>	16	30

### **Monthly moisture (inches) and temperature (°F) distribution:**

	Precip. Min.	Precip. Max.	Temp. Min.	Temp. Max.
January	0.67	1.91	2.1	39.7
February	0.61	1.70	7.0	44.1
March	1.01	1.85	14.5	50.5
April	0.97	1.75	21.8	60.1
May	0.99	1.79	28.7	69.9
June	0.83	1.29	35.0	80.6
July	1.81	2.90	40.8	85.2
August	2.34	3.18	40.2	82.1
September	1.25	1.98	32.9	76.1
October	0.96	1.72	22.5	65.7
November	0.74	1.37	13.5	51.3
December	0.70	1.79	4.8	41.9

**Climate Stations:**

			Period	
Station ID	<u>291664</u>	Location	<u>Chama, New Mexico</u>	From: <u>01/01/14</u> To: <u>12/31/01</u>
Station ID	<u>292700</u>	Location	<u>Eagle Nest, New Mexico</u>	From: <u>11/01/37</u> To: <u>12/31/01</u>
Station ID	<u>292837</u>	Location	<u>El Vado Dam, New Mexico</u>	From: <u>09/01/23</u> To: <u>12/31/01</u>
Station ID	<u>297323</u>	Location	<u>Red River, New Mexico</u>	From: <u>01/01/15</u> To: <u>12/31/01</u>

**INFLUENCING WATER FEATURES**

**Narrative:**

This site is not influenced by water from a wetland or stream.

**Wetland description:**

<b>System</b>	<b>Subsystem</b>	<b>Class</b>
N/A		

**If Riverine Wetland System enter Rosgen Stream Type:**

N/A

## REPRESENTATIVE SOIL FEATURES

### **Narrative:**

Soil depths range from shallow to moderately deep. Surface textures range from clay loams to silty clay loams and are very thin. Subsoils are generally clays. The amount of surface coarse fragments varies from channery to very channery and erosion pavement forms as the surface is eroded. Permeability is slow to very slow. Runoff is rapid and water-holding capacity is low to moderate.

**Parent Material Kind:** Marine deposits

**Parent Material Origin:** Shale-unspecified

### **Surface Texture:**

- |                    |
|--------------------|
| 1. Clay loam       |
| 2. Silty clay loam |

### **Surface Texture Modifier:**

- |             |
|-------------|
| 1. Channery |
| 2.          |
| 3.          |

**Subsurface Texture Group:** Clayey

**Surface Fragments <=3" (% Cover):** 35 to 60

**Surface Fragments >3" (% Cover):** 35 to 60

**Subsurface Fragments <=3" (%Volume):** 35 to 60

**Subsurface Fragments >=3" (%Volume):** 35 to 60

	<b>Minimum</b>	<b>Maximum</b>
<b>Drainage Class:</b>	<u>Well</u>	<u>Well</u>
<b>Permeability Class:</b>	<u>Very slow</u>	<u>Slow</u>
<b>Depth (inches):</b>	<u>10</u>	<u>40</u>
<b>Electrical Conductivity (mmhos/cm):</b>	<u>N/A</u>	<u>N/A</u>
<b>Sodium Absorption Ratio:</b>	<u>N/A</u>	<u>N/A</u>
<b>Soil Reaction (1:1 Water):</b>	<u>N/A</u>	<u>N/A</u>
<b>Soil Reaction (0.1M CaCl<sub>2</sub>):</b>	<u>N/A</u>	<u>N/A</u>
<b>Available Water Capacity (inches):</b>	<u>3</u>	<u>9</u>
<b>Calcium Carbonate Equivalent (percent):</b>	<u>N/A</u>	<u>N/A</u>

## **PLANT COMMUNITIES**

### **Ecological Dynamics of the Site:**

### **Plant Communities and Transitional Pathways (diagram)**

**Plant Community Name:** Historic Climax Plant Community

**Plant Community Sequence Number:** 1 **Narrative Label:** HCPC

**Plant Community Narrative:** Historic Climax Plant Community

The vegetation on this site appears as a mixed grassland-shrubland with scattered trees. Cool-season grasses dominate, but alkali sacaton and spike muhly are warm-season grasses common to the site. The shrub component is mostly low and big sagebrush. Rocky Mountain juniper is the most common tree. Forbs are visually conspicuous on the site

Canopy Cover:

Trees, shrubs and half-shrubs (average)	18 %
Ground Cover (Average Percent of Surface Area).	
Grasses & Forbs	25
Bare ground	48
Surface gravel	15
Surface cobble and stone	2
Litter (percent)	10
Litter (average depth in cm.)	2

**Plant Community Annual Production (by plant type):** \_\_\_\_\_

Plant Type	Annual Production (lbs/ac)		
	Low	RV	High
Grass/Grasslike	390	585	780
Forb	48	72	96
Tree/Shrub/Vine	108	162	216
Lichen			
Moss			
Microbiotic Crusts			
<b>Total</b>	600	900	1,200

**Plant Community Composition and Group Annual Production:**

**Plant Type - Grass/Grasslike**

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
1	PASM	Western Wheatgrass	180 – 225	180 – 225
2	SPAI	Alkali Sacaton	45 – 135	45 – 135
3	POFE KOMA	Muttongrass Prairie Junegrass	45 – 135	45 – 135
4	MUWR	Spike Muhly	27 – 63	27 – 63
5	BOGR2 PLJA	Blue Grama Galleta	27 – 63	27 – 63
6	ELEL5	Bottlebrush Squirreltail	27 – 45	27 – 45
7	ACNEN2	Columbia Needlegrass	27 – 45	27 – 45
8	SPORO ACRO7 2GRAM	Dropseed spp. Sleepygrass Other Grasses	27 – 90	27 – 90

**Plant Type - Forb**

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
9	ERIOG HEVI4	Wildbuckwheat spp. Hairy Goldenaster	9 – 45	9 – 45
10	2FORB	Other Forbs	9 – 45	9 – 45

**Plant Type – Tree/Shrub/Vine**

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
11	ARAR8 ARTR2	Little Sagebrush Big Sagebrush (Mountain)	45 – 90	45 – 90
12	ATCA2 ARFR4 KRLA2	Fourwing Saltbush Fringed Sagewort Winterfat	45 – 90	45 – 90
13	JUSC2	Rocky Mountain Juniper	0 – 18	0 – 18
14	PIED 2SD	Pinyon Pine Other Shrubs	0 – 18	0 – 18

**Plant Type - Lichen**

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

**Plant Type - Moss**

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

**Plant Type - Microbiotic Crusts**

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Other species that could appear on this site include: pine dropseed, Arizona fescue, Kentucky bluegrass, threadleaf groundsel, black sagebrush, pingue, rabbitbrush, broom snakeweed, Gambel oak, fleabane and penstemon.

**Plant Growth Curves**

Growth Curve ID 3308NM

Growth Curve Name: HCPC

Growth Curve Description: Cool-season dominated grassland/shrubland with a minor component of forbs.

Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
0	0	3	5	5	10	25	30	15	7	0	0

## **ECOLOGICAL SITE INTERPRETATIONS**

### **Animal Community:**

Habitat for Wildlife:

This site provides habitats which support a resident animal community that is characterized by elk, mule deer, coyote, mountain cottontail, Stephan's woodrat, western harvest mouse, vesper sparrow, gray headed junco, plain titmouse and fence lizard. Elk will use these sites during the winter months.

### **Hydrology Functions:**

The runoff curve numbers are determined by field investigations using hydrologic cover conditions and hydrologic soil groups.

#### **Hydrologic Interpretations**

<b>Soil Series</b>	<b>Hydrologic Group</b>

### **Recreational Uses:**

This site is not noted for its beauty and offers little in the way of recreation.

### **Wood Products:**

No significant wood products are produced on this site on a sustained yield basis.

**Other Products:**

**Grazing:**

Approximately 85 percent of the vegetation produced on this site are suitable for use by domestic livestock and wildlife. Grazing distribution need not be a problem as long as water and salt are adequately located.

Deterioration of the potential plant community is indicated by a decrease in western wheatgrass, muttongrass, prairie junegrass, alkali sacaton and fourwing saltbush. Species that increase include little and big sagebrush, blue grama, galleta and ring muhly. Brush infestation and severe gullyng of the site indicate severe deterioration.

A planned grazing system with periodic grazing and rest is best to maintain a friable soil surface on this site, which is susceptible to soil capping and subsequent sheet, rill and gully erosion. Such a system also is beneficial to plant growth, since it results in periodic defoliation and rest, which stimulate increased plant production.

**Other Information:**

**Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month**

<b>Similarity Index</b>	<b>Ac/AUM</b>
100 - 76	2.4 – 3.2
75 – 51	3.1 – 4.8
50 – 26	4.7 – 9.5
25 – 0	9.5+

Plant Part	Code	Species Preference	Code
Stems	S	None Selected	NS
Leaves	L	Preferred	P
Flowers	F	Desirable	D
Fruits/Seeds	F/S	Undesirable	U
Entire Plant	EP	Not Consumed	NC
Underground Parts	UP	Emergency	E
		Toxic	T

**Plant Preference by Animal Kind:**

**Animal Kind:** Livestock

**Animal Type:** Cattle

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Western Wheatgrass	<i>Pascopyrum smithii</i>	EP	D	D	P	P	P	D	D	D	D	D	D	D
Alkali Sacaton	<i>Sporobolus airoides</i>	EP	D	D	D	D	D	P	P	P	U	U	U	D
Muttongrass	<i>Poa fendleriana</i>	EP	P	P	P	P	P	P	P	P	P	P	P	P
Prairie Junegrass	<i>Koeleria macrantha</i>	EP	D	D	D	D	D	D	D	D	D	D	D	D
Spike Muhly	<i>Muhlenbergia wrightii</i>	EP	D	D	D	D	D	D	D	D	D	D	D	D
Pine Dropseed	<i>Blepharoneuron tricholepis</i>	EP	D	D	D	D	D	D	D	D	D	D	D	D
Fourwing Saltbush	<i>Atriplex canescens</i>	L/S	P	P	P	P	P	D	D	D	D	D	P	P
Winterfat	<i>Krascheninnikovia lanata</i>	L/S	D	D	D	P	P	P	P	P	P	D	D	D

**Animal Kind:** Livestock

**Animal Type:** Sheep

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Western Wheatgrass	<i>Pascopyrum smithii</i>	EP	U	U	D	D	D	D	D	D	D	D	D	U
Muttongrass	<i>Poa fendleriana</i>	EP	P	P	P	P	P	P	P	P	P	P	P	P
Prairie Junegrass	<i>Koeleria macrantha</i>	EP	D	D	D	D	D	D	D	D	D	D	D	D
Spike Muhly	<i>Muhlenbergia wrightii</i>	EP	D	D	D	D	D	D	D	D	D	D	D	D
Pine Dropseed	<i>Blepharoneuron tricholepis</i>	EP	D	D	D	D	D	D	D	D	D	D	D	D
Fourwing Saltbush	<i>Atriplex canescens</i>	L/S	P	P	P	P	P	D	D	D	D	D	P	P
Winterfat	<i>Krascheninnikovia lanata</i>	L/S	P	P	P	P	P	P	P	P	P	P	P	P
Fringed Sagewort	<i>Artemisia frigida</i>	L/S	D	D	D	U	U	U	U	U	U	D	D	D
Some Forbs	Various	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S

**Animal Kind:** Wildlife

**Animal Type:** Elk

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Wheatgrass spp.	Pascopyrum spp.	EP	D	D	D	P	P	P	D	D	D	D	D	D
Bromegrass spp.	Bromus spp.	EP	D	D	D	D	D	D	D	D	D	D	D	D
Fescue spp.	Festuca spp.	EP	D	D	D	D	D	D	D	D	D	D	D	D
Orchardgrass	Dactylis glomerata	EP	D	D	D	D	D	D	D	D	D	D	D	D
Bottlebrush Squirreltail	Elymus elymoides	EP	U	U	D	D	D	U	U	U	D	D	D	U
Sedges	Carex spp.	EP	D	D	D	D	D	D	D	D	D	D	D	D
Rushes	Juncus spp.	EP	D	D	D	D	D	D	D	D	D	D	D	D
Dandelion	Agoseris spp.	EP	U	U	P	P	P	D	D	D	D	D	D	U
Clover	Trifolium spp.	EP	P	P	P	P	P	P	P	P	P	P	P	P
Marigold	Baileya spp.	EP	U	U	D	D	D	D	D	D	D	D	D	U

**Animal Kind:** Wildlife

**Animal Type:** Mule Deer

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Hairy Mountainmahogany	Cercocarpus montanus	L/S	P	P	P	P	P	P	P	P	P	P	P	P
Cliffrose	Purshia mexicana	L/S	D	D	D	D	D	D	D	D	D	D	D	D
Winterfat	Krascheninnikovia lanata	L/S	D	D	D	D	D	D	D	D	D	D	D	D
Elderberry (Blue)	Sambucus nigra	L/S	U	U	P	P	P	P	P	P	U	U	U	U
Wildbuckwheat	Eriogonum spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U
Fleabane	Erigeron spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U
Larkspur	Delphinium confertiflorum	EP	U	U	D	D	D	D	D	D	U	U	U	U
Astragalus	Astragalus spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U
Sweet Clover	Melilotus spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U
Lupine	Lupinus alpestris	EP	U	U	D	D	D	D	D	D	U	U	U	U
Penstemon	Penstemon spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U
Indian Paintbrush	Castilleja coccinea	EP	U	U	D	D	D	D	D	D	U	U	U	U
Dandelion	Agoseris spp.	EP	U	U	P	P	P	D	D	D	D	D	D	U
Geranium	Geranium spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U
Fringed Sagewort	Artemisia frigida	L/S	D	D	D	D	D	D	D	D	D	D	D	D
Aster	Aster spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U
Balsamroot (Arrowleaf)	Balsamorhiza sagittata	EP	U	U	P	P	P	P	P	P	U	U	U	U
Thistle	Cirsium spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U
Phlox	Phlox spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U
Dock	Rumex spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U
Salsify	Tragopogon porrifolius	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Clover	Trifolium spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U

**SUPPORTING INFORMATION**

**Associated sites:**

Site Name	Site ID	Site Narrative

**Similar sites:**

Site Name	Site ID	Site Narrative

**State Correlation:**

This site has been correlated with the following sites: \_\_\_\_\_

**Inventory Data References:**

Data Source	# of Records	Sample Period	State	County

**Type Locality:**

State: New Mexico

County: McKinley, Rio Arriba, Sandoval, Santa Fe, Taos

Latitude: \_\_\_\_\_

Longitude: \_\_\_\_\_

Township: \_\_\_\_\_

Range: \_\_\_\_\_

Section: \_\_\_\_\_

Is the type locality sensitive?    Yes             No

General Legal Description: \_\_\_\_\_

**Relationship to Other Established Classifications:**

**Other References:**

Data collection for this site was done in conjunction with the progressive soil surveys within the Southern Rocky Mountains 48 Major Land Resource Area of New Mexico. This site has been mapped and correlated with soils in the following soil surveys. Taos, Santa Fe, Rio Arriba, Los Alamos, and Sandoval county surveys.

**Characteristic Soils Are:**


**Other Soils included are:**

--	--

**Site Description Approval:**

<u>Author</u>	<u>Date</u>	<u>Approval</u>	<u>Date</u>
Don Sylvester	03/23/82	Don Sylvester	03/23/82

**Site Description Revision:**

<u>Author</u>	<u>Date</u>	<u>Approval</u>	<u>Date</u>
Elizabeth Wright	02/26/03	George Chavez	10/31/03